June 28, 2006

Mr. Andrew Penca
Department of Workforce Development
10 North Senate Avenue
Indianapolis, IN 46204

Dear Mr. Penca,

On behalf of the Region 9 Regional Workforce Board, I am pleased to submit this revised Strategic Skills Initiative Proposal. Region 9 has decided to focus their efforts on three main areas:

- Nursing
- Supervisory Skills
- Embedded Systems

We have included in the proposal a brief narrative for each area, along with the matrices and budget pages.

We truly appreciate the willingness of the Department of Workforce Development to allow Region 9 the additional time to submit our proposal. We know that important strides will be made in the region with the monies allocated by DWD to further our efforts.

If you have any questions regarding the proposal, please contact Mindy Press at (704) 668-1554 or at **Mpress3179@aol.com**. Thank you again for your consideration.

Sincerely,

Mindy S. Press

Mindy S. Press
Arbor Education & Training

Nursing Initiative – Increasing the number of ASN graduates in the Region

Executive Summary

The shortage of registered nurses in Region 9 was identified in Phase Two of the Strategic Skills Initiative as a critical shortage area. While we have made progress during the last two years with an increase in ASN graduates at Ivy Tech and Indiana University-Purdue University Columbus, the supply of 120 graduates per year is barely meeting the annual demand, let alone reducing the existing shortage. The nursing initiative is the most advanced of our sector-based groups, having begun two years ago and now serves as an operational model for regional, sector-based approaches for other industries. This proposal addresses the magnitude of this nursing shortage, the root causes, and the possible solutions to overcoming the shortage of registered nurses. The solution of the Strategic Skills Initiative requires $ 480,000 to fund faculty positions, $ 100,000 to administer a loan program, with an additional $69,200 in administrative costs.

1. Background:

Region 9 has been addressing the nursing shortage situation since September 2002. The original kick-off meeting was held with regional hospital representatives, educational institution leaders, and the Commission of Higher Education. In February 2003, Ivy Tech conducted a needs analysis that quantified the nursing shortage in hospitals, long term care units, and home care in the regional area. An analysis was completed to determine the amount of financial support to accelerate ASN programs at Ivy Tech and support a BSN program at IUPUC. A total of $ 1.1 million was identified as an immediate need. Between May-December 2003, area hospitals and the local community raised $ 1.1 million to support faculty and equipment requirements. On November 18, 2003, the first South Central Advisory Group meeting of Education and Hospital Representatives was held. The group is made up of education representatives from secondary and post-secondary institutions as well as hospital administrators from Bartholomew, Decatur, Jackson, Jennings, and Johnson counties.

Quarterly meetings are held on a rotating basis at each of the area hospitals and post-secondary institutions.

The meeting content includes a tour of the hospital, sharing of a best practice, discussion of current trends, and updates of nursing shortages and initiatives to increase the supply throughout the area.

2. Root Cause:

The root cause of the shortage of registered nurses in Region 9 and throughout the entire state of Indiana is limitations to throughput in the nursing education system; specifically,

the limited number of MSN degreed professionals and adjunct faculty to educate ASN candidates. The state of Indiana requires that in order to teach ASN and BSN degree programs that faculty have an MSN degree.

3. Solutions:

Our proposal for this initiative is two-fold: a solution for years one and two, and a separate solution for years three, four and five.

1) Solution for years one and two - $ 480,000. We propose to fund faculty position assignments in Columbus, Franklin, Madison, Lawrenceburg and Seymour, for 06/07 and 07/08. Our cost estimate for four positions is $ 240,000 per year, or $ 480,000 for the two-year period. Four net new faculty positions will add 80 more ASN degrees across the region.

2) Solution for years three, four, and five - $ 100,000. We propose to administer a forgivable loan program for MSN candidates in this region who will teach nursing courses for students in this region. Loans of up to $ 5,000 per year will be made to MSN candidates for the 06/07 and 07/08 school years. Candidates will complete their MSN degree in the two years of the program (by 6/30/08). When the MSN completes a year (two semesters) of instruction in this region (minimum 3 credit hour load), one-third of the loan will be forgiven. When the MSN completes three years of instruction, the entire loan will be forgiven (by 6/30/11). If the MSN does not fulfill the instructional requirements (three years in this region), the loan, or the balance of the loan, will be repaid at no interest on a 10-year schedule.

3) $ 69,200 for administrative expenses would be spent over the two year period.

We propose to recruit 10 to 20 MSN candidates from across the region. Of the final number, we expect 80% to 90% will successfully complete their MSN degree by 6/30/08. Of this reduced number, we expect that 67% to 75% will fulfill the three-year commitment. Because of the increased numbers of qualified faculty, we expect that 40 more ASN degrees will be completed annually across the region by 6/30/11 (years three, four, and five).

4. Desired Outcome:

The desired outcome of this proposal is that more teaching MSN's will produce more ASN's, which will help reduce the shortage of registered nurses.

5. Program Partners for Health Care

We have enlisted the help of the following agencies to participate in the solution portion of the proposal.

Columbus Regional Hospital
Schneck Medical Center
St. Vincent Jennings
Decatur Memorial
King's Daughters
Batesville
Lawrenceburg

Ivy Tech State College in Columbus, Madison and Lawrenceburg
Indiana University-Purdue University Columbus in Columbus

INDIANA STRATEGIC SKILLS INITIATIVE

SRATEGIC PLANNING AND OPERATIONAL PLANNING

EGR 9

SOLUTION TITLE: Nursing: increasing the number of ASN graduates in the Region; focus on teaching faculty; $580,000

Critical Project Activities	Associated Tasks	Deliverable (Must be measurable)	Status of Deliverable and % met to date	Deliverable Due Date	Financial Amt. Associated w/ Deliverable
Project Activity 1:					
recruit new full-time faculty				July, August, 06	
select & hire new full-time faculty	transfer funds from RO to Ed. Inst.(s)	five new faculty across the Region		August, 06	
recruiting MSN candidates					
initial recruitment	develop program descriptions	completed document		mid-July, 06	
	identify target populations	completed document		mid-July, 06	
	communicate program availability			through mid-august, 06	
ongoing recturment\	identify target populations	completed document		ongoing	
	communicate program availability			ongoing	
Project Activity 2:					
develop selection criteria	working group meetings	published criteria		end of July, 06	
make selections				mid August, 06	
initial	review applications				
ongoing					
Project Activity 3:					
administer forgiveable loans	promissory notes	executed agreements		end of August, 06	
	repayment schedules	payment books			
forgiveness of loans					

Budget Detail

Region # 9
Solution #:
Solution Description: Nursing faculty to increase the number of ASN graduates across the region.

Each solution within the proposal must follow this budget format for consideration
PIs Identify sub-category line items as well

	Year 1		Year2	
	SSI Funded	Match	SSI Funded	Match
Program Salary & Benefits				
a) MSN faculty added with SSI funding	240000		240000	
b) MSN faculty contributed by hospitals		71500		71500
c) 10% of Director of Nursing, ITCC		5000		5000
d)				
etc.				
Subtotal -Program Salary and Benefits	**240000**	**76500**	**240000**	**76500**
Contracted Services				
consulting paid by CEC		5000		5000
Subtotal - Contracted Services	0	5000	0	5000
Travel				
Subtotal - Travel	0	0	0	0
Materials & Supplies				
space and equipment for two remote sites		5000		5000
Subtotal - Materials and Supplies	0	5000	0	5000
Overhead				

Subtotal - Overhead	0	0	0	0
Other Expenses				
forgiveable loans	50000		50000	
Subtotal - Other Expenses	50000	0	50000	0
Administrative Costs	Functions that include accounting, budgeting, financial & cash management functions; procurement & purchasing functions; property management functions; personnel management functions; payroll functions; monitoring; audit functions; coordinating the resolution of findings arising from audits & monitoring reports; etc.			
Administrative Costs	34,600		34,600	
Subtotal - Administrative Costs	34600	0	34600	0
Total	324600	86500	324600	86500
2 year total funding requested	**649200**			
2 year total match	**173000**			

notes:

20000	donated employee differential Columbus
20000	donated employee differential Mad/Law
1500	dollars per semester
3	semesters
7	faculty
31500	
71500	

Supervisory/Leadership Academy

Background:

The purpose of the Supervisory/Leadership Academy is to address the significant need for qualified and capable supervisory talent identified by existing employers and required for potential new employers in the recently completed Strategic Skills Initiative Report for DWD Region 9. Frontline supervisors and managers must be equipped with leadership skills and strategies that keep employee performance on track and aligned with key business objectives. If their performance suffers, overall performance suffers including the bottom line.

Additionally, from an economic development standpoint, having a "pool" of well trained, readily available, certified supervisory candidates within Region 9 would enhance the region's business retention/expansion and attraction activities. A further benefit of a general public program (as outlined below) is the opportunity to design and implement a "real world" training academy for the resident population, including the economically disadvantaged individuals within the region. Upon successful completion of the program, participants will possess the workplace and supervisory skills necessary to help companies throughout the region successfully compete in the global marketplace. It is believed that this could be an excellent model for communities throughout the State; a win-win-win for the individual (enhanced employment and earning potential), the employer (improved productivity) and the State (retaining/attracting new business and building a vibrant Region 9).

The purpose of the proposal is to think outside-of-the-box, to come up with an innovative method to create a program that will ultimately result in placing participants in good paying jobs and that will create a strong regional workforce base; one that is attractive to existing business and one that is enticing to prospective companies.

The proposed Supervisory/ Leadership Academy will serve two specific markets; existing companies and the general public.

The cost for a participant in this program will be: $3030. The budget is further explained later in the proposal. However, in order to select the most deserving participants (either private or public) a scholarship application will be created and various factors will be weighted for selection. This will be called the 30/30 Scholarship.

Existing Companies:

Frequently, supervisors are current employees with strong technical skills who have been promoted. Just as frequently, companies neglect to equip them with the next level of

skills needed to lead the workforce and organization to a higher level. The proposed program is ideal for new managers, front-line supervisors, team members and anyone that wants to enhance their people's managerial and leadership skills. These classes will be delivered on-site and participating companies will provide mentors for their employees involved in the training. Educational programming can be customized for various industry sectors (i.e. manufacturing, healthcare, hospitality, etc).

General Public:

At the same time, the program will work to create a pool of available, talented personnel in the region to move into vacant positions in manufacturing, healthcare, hospitality and other industries. RWB staff and partners will collaborate with employers throughout the region to develop meaningful and productive internship opportunities for participants in the general public program. Ideally, internships would be arranged so that participants would have the opportunity to work within several different companies, thus gaining an excellent knowledge of manufacturing, healthcare, hospitality or other industries.

Program Entrance Requirements:

Existing Companies:

The WorkKeys System will be utilized to profile the job of a supervisor (3-5 skills). Individuals wishing to enter the program will be measured against said profile by testing at one of the WorkOne Centers conveniently located throughout the region. Gap training, using KeyTrain, will be made available to individuals initially lacking the required skills to enter the program. Participants will have the opportunity to earn a Workplace Readiness Certificate from the Indiana Department of Workforce Development.

General Public:

It is envisioned that individuals could self-nominate, be encouraged to participate or be nominated to participate in the program with the understanding and commitment to finish the program. Again, WorkOne will be used to assess candidates and, if necessary, to arrange the required gap training, using KeyTrain.

Educational Program:

Two versions of the program are proposed, a two-year Certificate Program and a one-year Certificate Program. The full and preferred Supervisory/Leadership Academy consists of 156 hours of instruction delivered over a two-year period. Participants will attend class from 8am-4pm, one day per month for 24 months. Class sessions are led by a facilitator and are designed to be highly interactive, featuring practical skill application, small-group exercises, real-life examples and videos.

At the end of each session, participants will develop an Individual Action Plan (IAP) to enable them to immediately apply on the job what they've learned in the classroom. During the first hour of subsequent sessions, participants will report back to the group regarding their IAP experiences and explore best practices.

Topical areas of study include: verbal and written communication skills, time and meeting management skills, planning, organizing, goal setting, coaching and motivating employees, teamwork, delegating authority, diversity, problem solving, decision-making, performance reviews, conflict resolution and an overview of HR Law, which allows them to understand the impact of their decisions on the business.

Key Learning Objectives:

1. To improve communication skills (verbal, non-verbal, written) by learning, understanding and appreciating individual behavioral differences.
2. To improve time management and meeting management skills.
3. To better identify work priorities and set verifiable goals.
4. To provide participants with skills to practice active listening and provide constructive feedback with a positive slant.
5. To provide participants with skills to successfully coach and motivate employees.
6. Computer Applications (MS Word, Excel and PowerPoint).

Program Benefits:

1. Build employee commitment to organizational goals.
2. Encourage collaboration and foster teamwork.
3. Participants gain confidence and an increased level of professionalism.
4. Create more effective communicators (verbal, non-verbal and written), thus reducing costly errors caused by miscommunication.
5. Reinforced Learning: the length of the program moves learning from an "awareness level" into a "practice level".
6. Skills learned are immediately applicable on the job, resulting in more productive work behaviors.

Anticipated Outcomes:

Upon successful completion of the two-year program, participants will earn a Certificate of Completion and 9 college credits. Participants completing just the first year of the program will earn a Certificate of Completion and 4.5 college credits. In addition, nationally recognized workforce certifications will be embedded into the Program. An ancillary outcome is the hope that participants will be encouraged by their success and decide to pursue a college degree and become a lifelong learner, thus raising educational attainment levels and skill sets of southeastern Indiana residents.
The Regional Workforce Board also plans to track specific outcomes of the program. These would include:

- Enrollment by sector
- % of completion by sector
- % of certification/credentialing by sector
- % of certified placement (post-credentials employment)
- Average compensation increase
- Customer satisfaction (% of employers re-enrolling candidates)

Current Root Causes for Worker Shortage:

There are two primary root causes that are responsible for the shortage of qualified supervisors. The first is the tendency of regional employers to focus their limited training budgets on technical skill training rather than "soft skill" training. The second reason is the relatively low per capita income/disposable income of the resident population that makes it difficult for them to afford/attend continuing education classes.

According to the SSI Report for Region 9, there is a projected shortage of 170 supervisors over the next 6 years. This number does not include replacement supervisory positions due to pending retirements, out-migration or the identified demand for supervisory training by regional employers.

Project Budget: (Assuming 10 Person Cohort Groups)

Tuition	$19,500 (156 Contact Hours x $125/Hour)
Books	10,800 (24 Books/Person x 10 participants/Cohort x $45/Book)
Total Cohort Cost	**$30,300 ($3,030/Participant)**

Assuming that Region 9 runs three cohort groups for the private sector and one cohort group for the general public in year 1 and two groups for the private sector in year 2, the estimated cost of the Program would be $181,800. Additional funds of $7,500 will be needed to market and $22,716 to administer the Program throughout the region.

Budget:	**Year 1**	**Year 2**
Program	$121,200	$60,600
Marketing	$ 7,500	---------
Administration	$ 15,444	$ 7,272
Total	$144,144	$67,872

The second year 50% match would be $33,000 which could be comprised of cash and/or in-kind contributions by letting their employees have time off of work to pursue the program.

As proposed, the private-sector program will train 50 incumbent supervisors over the next two years. The general public program will train an additional 10 individuals for supervisory positions over the same time period, thus helping to begin to alleviate the projected shortage in supervisory personnel.

INDIANA STRATEGIC SKILLS INITIATIVE

SRATEGIC PLANNING AND OPERATIONAL PLANNING

EGR 1

SOLUTION TITLE:__ Supervisory/Leadership Academy

Critical Project Activities	Associated Tasks	Deliverable (Must be measurable)	Status of Deliverable and % met to date	Deliverable Due Date	Financial Amt. Associated w/ Deliverable
Project Activity 1: Train three cohort groups for the private sector and one cohort group for the general public	Market the program to enroll students Market the program to specific employers Develop curriculum/material Set up meeting dates for training Facilitate training	Completion of 40 students through the program		6/30/2007	$121,200
Project Activity 2: Train two cohort groups for the private sector	Market the program to enroll students Market the program to specific employers Set up meeting dates for training Facilitate training	Completion of 20 students through the program		6/30/2008	$65,600
Project Activity 3:					

(Reduce/expand table as necessary)

Budget Detail

Region # 9
Solution #: Supervisory/Leadership Academy
Solution Description: Run training cohorts for employees and the general public to learn supervisory/management skills.

Each solution within the proposal must follow this budget format for consideration
Pls Identify sub-category line items as well

	Year 1		Year2	
	SSI Funded	Match	SSI Funded	Match
Program Salary & Benefits				
a) Employers give salaried time to employees for				33,000
b) attending class				
c)				
d)				
etc.				
Subtotal -Program Salary and Benefits	**0**	**0**	**0**	**33000**
Contracted Services				
Subtotal - Contracted Services	0	0	0	0
Travel				
Subtotal - Travel	0	0	0	0
Materials & Supplies				
Tuition	78,000		39,000	
Books	43,200		21,600	
Subtotal - Materials and Supplies	121200	0	60600	0

Overhead				
Subtotal - Overhead	0	0	0	0
Other Expenses				
Marketing	7,500			
Subtotal - Other Expenses	7500	0	0	0
Administrative Costs	Functions that include accounting, budgeting, financial & cash management functions; procurement & purchasing functions; property management functions; personnel management functions; payroll functions; monitoring; audit functions; coordinating the resolution of findings arising from audits & monitoring reports; etc.			
Administrative Expenses	15,444		7,272	
Subtotal - Administrative Costs	15444	0	7272	0
Total	144144	0	67872	33000
2 year total funding requested	**212016**			
2 year total match	**33000**			

The Embedded Systems Economic Growth Cluster

Executive Summary

Due to the region's supply-chain relationship to the automotive and emissions industries, a number of regional firms have developed tremendous capabilities around the dual disciplines of engineering and computerized controls and software. Currently, there is an urgent need for skilled workers to fuel the growth of this emerging cluster. This proposal addresses the magnitude of these shortages, the root causes, and the possible solutions to overcoming these skill gaps. This particular solution of the Strategic Skills Initiative requires $234,360 to be used primarily to match regional firm investments in advanced certification training needs that are the essential requirements for this cluster. An additional $128,750 will be provided as matching funds over the two-year project.

1. Background:

What are embedded systems and what are the applications?

An *embedded system* is a special-purpose computer controlled electro-mechanical system in which the computer is completely encapsulated by the device it controls. An embedded system has specific requirements and performs pre-defined tasks, unlike a general-purpose personal computer. Examples of the applications of embedded systems include devices such as iPods, ATMs, medical equipment, avionic inertial guidance systems, engine controllers, sensors, emission controls, household appliances, calculators, and cell phones.

What services are offered by companies in the embedded systems cluster?

A *cluster* is a geographic concentration of interconnected companies and institutions in a particular field. The North American Industry Classification System (NIACS) codes that represent the embedded systems cluster include two primary segments: engineering services (541330) and computer design services (541511 and 541512). Specific services within this cluster include:

- Design and engineering
- Power electronics
- Emission technology
- Software development
- Host interface development
- Independent verification and validation
- Support & maintenance
- Modeling and simulation
- Hardware design
- Platform management

Who are the players?

Within Indiana Workforce Board Region 9, there are approximately 80 firms that provide services associated with embedded systems. Regional players in the embedded systems cluster include LHP Software, Inc., Magnalinea Corporation, Analytical Engineering,

Inc., Adiabatics, Inc., KPIT Cummins, Inc., Tata Consultancy Services, Mototron Corporation, CyberMetrix Inc., and Cummins Inc.

What are the educational and workforce linkages?
Clusters require investments not only in the form of capital, but also in the forms of private/public collaborations. Coalitions can take the lead in such activities as establishing university-based testing facilities and training or research programs, collecting cluster-related information, offering trade delegations, offering forums on common management problems, or even purchasing consortia.

Regionally within Indiana there are a number of educational linkages that can be established to this cluster including:

- IUPUC Purdue School of Technology
- Indiana University
    - School of Informatics
    - Collaboration in Life Sciences and Informatics Research (CLSIR)
    - Office Technology Transfer
- Purdue University
    - Technical Assistance Program
    - Purdue Research Foundation
    - Industry Research and Technology Program
    - Center for Advanced Manufacturing
    - Center for Information and Numerical Data Analysis and Synthesis (CINDAS)
- Rose Hulman Ventures
- Notre Dame
    - Control Systems Research Laboratory
    - Design Automation Laboratory
    - Industrial Assessment Center

From a workforce perspective, the embedded systems cluster resides within the advanced manufacturing sector. Advanced manufacturing is the value-added combination of people, process, and products that remains competitive in a high-wage environment in the pursuit of continuous improvement. Workforce Region 9 has a cluster of such assets which includes:

- A large concentration of engineering and production talent
- A number of firms clustered in the embedded systems, micro-controller and sensor industries
- A dense network of manufacturing design, pilot, and prototyping shops
- A deep knowledge and ethic of continuous improvement and six sigma processes

According to a salary survey conducted by The Ganssle Group, occupations within the embedded systems engineering field in the US have a mean salary amount of $80,383 making it one of the few technology occupations where salaries have been relatively unaffected by global outsourcing.

The Embedded Systems Commercialization Pilot Project
Recently a pilot project involving regional firms in the embedded systems cluster and liaisons of Purdue University's Technology Transfer Office has commenced. The purpose of the collaborative project is to explore a functional process for identifying Purdue technology that can be exported to Southern Indiana to create growth-business opportunities within the embedded systems cluster. To date, meetings have been held at both Purdue University and in Columbus, Indiana between the key players who make up the cluster. Through these meetings, there has been considerable interest in aligning the resources and capabilities of the partners to further growth of the cluster itself.

Next steps of the project include presentations made by each of the cluster members to Purdue in order to develop a better understanding of the member's capabilities and technology needs in sort of a "reverse road show" format. Purdue will then find applicable technologies and intellectual property presented in the form of technical briefings that it may possess which could possibly benefit the cluster as a whole and its individual members. From there, any necessary licensing arrangements will be made between the industry members and Purdue and the process will be refined and repeated.

The idea in a nutshell is to take something that is portable (i.e. intellectual property in the form of basic or applied research) and place it into a regional area that already has sufficient skills, capabilities, and talent that can potentially commercialize the technology. The idea is to simultaneously promote competition and cooperation within the embedded systems cluster at the same time. Paradoxically, the enduring competitive advantages in the global economy lie increasingly in local things—knowledge, relationships, and motivation that distance rivals cannot match. This is how such clusters grow and prosper.

2. Shortages:

Based upon local assessments with companies participating in the micro-embedded systems cluster within Region 9, it is evident that there are definitive shortages of supply of trained and skilled workers. To estimate the number of current and projected shortages of these workers over the next 2 years, a representative sampling of the total population of approximately 80 firms within Workforce Region 9 was conducted.

The sample size consisted of approximately 20 firms and asked respondents within the cluster to estimate two metrics:

- The number of currently available positions the firm required, and
- The projected number of estimated workers required over the next 2 years

The average number of current required workers was 2.15 per responding firm. For estimated workers projected over the next two years, the average was 3.25 employees per firm per year. Extrapolated across Region 9 this would indicate the following shortages:

Estimated Numbers of Worker Shortages in the Embedded Systems Cluster

TimeFrame	Totals
Current Shortages (2.15 per firm)	≈172 Workers
Projected Shortages Over Next Two Years (3.25 per firm)	≈260 Workers

Beyond these shortages, there are also human capital requirements related to the Technology Commercialization Project that seeks to bring new technology and investment into the regional area. Such a project requires the expansion of this sector through new business start-ups and the expansion of existing firms. While it's not possible to accurately forecast this demand over the next five to seven years, it's safe to say that such a project will surely increase the projected shortages documented above. More specific goals and measures are provided in the Solutions section of this document related to the effect of this kind of economic expansion.

3. Root Causes:

Nature of the Work

The tasks performed by workers known as computer software engineers evolve quickly, reflecting new areas of specialization or changes in technology, as well as the preferences and practices of employers. Computer software engineers apply the principles and techniques of computer science, engineering, and mathematical analysis to the design, development, testing, and evaluation of the software and systems that enable computers to perform their many applications.

Software engineers working in applications or systems development analyze users' needs and design, construct, test, and maintain computer applications software or systems. Software engineers can be involved in the design and development of many types of software, including software for operating systems and network distribution, and compilers, which convert programs for execution on a computer. In programming, or coding, software engineers instruct a computer, line by line, how to perform a function. They also solve technical problems that arise. Software engineers must possess strong programming skills, but are more concerned with developing algorithms and analyzing and solving programming problems than with actually writing code.

Computer applications software engineers analyze users' needs and design, construct, and maintain general computer applications software or specialized utility programs. These workers use different programming languages, depending on the purpose of the program. The programming languages most often used are C, C++, and Java, with Fortran and COBOL used less commonly. Some software engineers develop both packaged systems and systems software or create customized applications.

Training, Other Qualifications, and Advancement

Most employers prefer to hire persons who have at least a bachelor's degree and broad knowledge of, and experience with, a variety of computer systems and technologies. The usual degree concentration for applications software engineers is computer science or

software engineering; for systems software engineers, it is computer science or computer information systems. Graduate degrees are preferred for some of the more complex jobs.

Academic programs in software engineering emphasize software and may be offered as a degree option or in conjunction with computer science degrees. Increasing emphasis on computer security suggests that software engineers with advanced degrees that include mathematics and systems design will be sought after by software developers, government agencies, and consulting firms specializing in information assurance and security. Students seeking software engineering jobs enhance their employment opportunities by participating in internship or co-op programs offered through their schools. These experiences provide the students with broad knowledge and experience, making them more attractive candidates to employers. Inexperienced college graduates may be hired by large computer and consulting firms that train new employees in intensive, company-based programs. In many firms, new hires are mentored, and their mentors have an input into the performance evaluations of these new employees.

For systems software engineering jobs that require workers who have a college degree, a bachelor's degree in computer science or computer information systems is typical. For systems engineering jobs that place less emphasis on workers having a computer-related degree, computer training programs leading to certification are offered by systems software vendors. Nonetheless, most training authorities feel that program certification alone is not sufficient for the majority of software engineering jobs.

Persons interested in jobs as computer software engineers must have strong problem-solving and analytical skills. They also must be able to communicate effectively with team members, other staff, and the customers they meet. Because they often deal with a number of tasks simultaneously, they must be able to concentrate and pay close attention to detail.

As is the case with most occupations, advancement opportunities for computer software engineers increase with experience. Entry-level computer software engineers are likely to test and verify ongoing designs. As they become more experienced, they may become involved in designing and developing software. Eventually, they may advance to become a project manager, manager of information systems, or chief information officer. Some computer software engineers with several years of experience or expertise find lucrative opportunities working as systems designers or independent consultants or starting their own computer consulting firms.

As technological advances in the computer field continue, employers demand new skills. Computer software engineers must continually strive to acquire such skills if they wish to remain in this extremely dynamic field. For example, computer software engineers interested in working for a bank should have some expertise in finance as they integrate new technologies into the computer system of the bank. To help them keep up with the changing technology, continuing education and professional development seminars are offered by employers, software vendors, colleges and universities, private training institutions, and professional computing societies.

Current Root Causes for Worker Shortage

There are principally three root causes that are responsible for the shortages of workers in this regional cluster. These include: 1) Education and training capacity, 2) Pipeline and career awareness factors, and 3) Brain drain leakages.

A discussion is presented related to each of these root causes:

- Education and Training Capacity: There are primarily two institutions that provide computer and engineering related degrees and training within Workforce Region 9: The Purdue School of Technology and Ivy Tech. These two institutions currently graduate about 20 computer systems programmers and engineers each year, far below the current requirements and future projected needs as documented in the above "shortages" section. There are currently no degree programs available to train engineers throughout Region 9. Furthermore, no degree is available which provides education or training specifically in the embedded systems field—where engineering meets software. Lastly, with regard to advanced training, most occupations in this sector require specific certifications that are only provided through the software companies themselves or through licensed institutions.

- Pipeline and Career Awareness: Because of global outsourcing trends, there is a belief among college students that computer related jobs are migrating in vast numbers to places like Bangalore, India and Beijing, China. While a number of basic programming jobs have indeed been outsourced to such centers, many jobs in the advanced areas of embedded systems and controls have remained quite competitive throughout the U.S. Also, many of the firms that participate in this segment are quite small by normal industrial size standards and don't have the financial resources to do extended career awareness programs to focus attention upon their talent needs.

- Brain Drain Leakages: Because embedded systems involves an overlap from a number of occupational disciplines, it faces tough competition for talent among many other larger sectors who also require engineers, computer programmers, and systems analysts, such as the manufacturing and software sectors. Because there are no concerted efforts by this young sector to attract or leverage college interns, there is significant talent attrition from the area.

4. Solutions:

Five specific solutions (project activities) are recommended to overcome the occupational shortages inherent in the embedded systems cluster within Region 9. These project activities include: Advanced Certifications, Training and Skills Improvement, Attraction and Awareness Events, Focused Internship Programs, and the Technology Commercialization Pilot Project.

1) Advanced Certifications

This is the most critical component of all of the recommended solutions. The two most demanded certifications required by this cluster are provided by two national firms: **National Instruments** and **The MathWorks** (see Appendix A.) Each of the respondents to the administered survey had an overwhelming need to train their current workforce, as well as a need to train and place new workers with these skill sets. National Instruments primarily conducts it's training out of Carmel, Indiana while The MathWorks conducts more regional training events. However, both firms *will* conduct on-site corporate training if we could amass enough students through the Strategic Skills Initiative process. Based on the surveyed demand of the cluster, the projected numbers of these certifications are presented below.

National Instruments LabVIEW Training	Projected Measurement Year One	Projected Measurement Year Two
# of Training Enrollments	30	40
# of Training Completions	25	35
# of Certifications Presented	25	35
# of Job Placements or Creation	15	25

The MathWorks Matlab Training	Projected Measurement Year One	Projected Measurement Year Two
# of Training Enrollments	35	45
# of Training Completions	30	40
# of Certifications Presented	30	40
# of Job Placements or Creation	10	15

2) Training and Skills Improvement

Ivy Tech, located at two campuses within Workforce Region 9, and the Purdue School of Technology in Columbus can provide a number of on-site, contextualized training programs that provide college credit to the workers of this cluster. These required skills were directly cited by the companies as "baseline" skills through the administered survey and were considered as "essential" to their future growth. Ivy Tech uses Pearson, Inc. as their educational partner in providing certification training programs. Pearson VUE provides online electronic testing solutions that enhance the performance, reliability and security of high-stakes testing programs throughout the world. The most demanded strategic training centered around Oracle and Microsoft programming and systems certifications as documented below.

Oracle and Microsoft Programming and Systems Certification Training	Projected Measurement Year One	Projected Measurement Year Two
# of Training Enrollments	25	30
# of Training Completions	22	25

# of Certifications Presented	22	25
# of Job Placements or Creation	5	10

In addition, the cluster participants also identified Cisco training as a strategic skills gap among regional workers. Cisco training provides various paths (or tracks) such as Routing and Switching, Network Security, and Service Provider are available so individuals can match their certification path to their job role or industry. The demand for such training is as follows:

Cisco Training and Certification	Projected Measurement Year One	Projected Measurement Year Two
# of Training Enrollments	10	20
# of Training Completions	8	18
# of Certifications Presented	8	18
# of Job Placements or Creation	5	8

3) Attraction and Awareness

There are a number of successful international competitions that have proven their effectiveness at bringing awareness to particular technology trades or skill-sets. For instance, Google uses its "Google Programming Contest" in regional technology competitions to find and attract programming and systems engineering talent. Another popular event is TopCoder that poses problems in a competition format and awards points and cash prizes to those contestants who solve those problems. A slight regional twist on the TopCoder concept involving the application of software to physical things (the very definition of an embedded system) could be a very effective career awareness tool by helping companies and talent find one another.

TopCoder Regional Contests (Assumption 1 in every 4 firms participate)	Projected Measurement Year One	Projected Measurement Year Two
# of Regional Contestants	40	75
# of Participating/Sponsoring Companies	15	30
# of Resulting Job Placements	10	15

4) Internship Programs

Working in conjunction with the Columbus Education Coalition, this project will design and place students with special emphasis on embedded systems with the objective of demonstrating the wide range of career opportunities that are available in this cluster. Internships will focus on the following skill-sets:

- Design and engineering
- Power electronics
- Emission technology
- Software development

- Host interface development
- Independent verification and validation
- Support & maintenance
- Modeling and simulation
- Hardware design
- Platform management

Targeted Student Internships	Projected Measurement Year One	Projected Measurement Year Two
# of Unpaid Student Internships	20	25
# of Paid Student Internships	15	20
# of Students Placed Within The Cluster	5	10

5) Technology Commercialization Pilot Project

The purpose of this collaborative project is to explore a functional process for identifying Purdue technology that can be exported to Southern Indiana to create growth-business opportunities within the embedded systems cluster. While the previous solutions would be implemented on a two-year timetable, this particular component will likely take more time for results to be created. A reasonable time frame would be between two and five years, however, the necessary skills training for the workers and the patent identification and license process can take place within the first two years of the project as documented below.

Commercialization Pilot Project	Projected Measurement Year Two	Projected Measurement Year Three+
# of New Jobs Created	10	25
Expansions (# of workers)	25	50
# of Advanced Certifications Projected	12	25
# of Technology Patents Licensed	3	6
# of New Venture Start-Ups	2	2
Amount of Capital Investment	$1,000,000	$2,500,000

INDIANA STRATEGIC SKILLS INITIATIVE

STRATEGIC PLANNING AND OPERATIONAL PLANNING

EGR 1

SOLUTION TITLE: Embedded Systems Solution

Critical Project Activities	Associated Tasks	Deliverable (Must be measurable)	Status of Deliverable and % met to date	Deliverable Due Date	Financial Amt. Associated w/ Deliverable	Status *(include revised due dates if necessary)*
Project Activity 1: Advanced Certifications	National Instruments LabVIEW Training	Enrollments: 70 Completions: 60 Certifications: 60 Job Placements: 40		Ongoing (2 yrs)		
	MathWorks Matlab Training	Enrollments: 80 Completions: 70 Certifications: 70 Job Placements: 25		Ongoing (2 yrs)		
Project Activity 2: Training and Skills Improvement	Oracle and Microsoft Systems Certifications	Enrollments: 55 Completions: 47 Certifications: 47 Job Placements: 15		Ongoing (2 yrs)		
	Cisco Certification	Enrollments: 30 Completions: 26 Certifications: 26 Job Placements: 13		Ongoing (2 yrs)		
Project Activity 3: Attraction and Awareness	TopCoder Competition (in embedded systems)	# of Contestants: 115 # of Participating Companies: 45 # of Resulting Job Placements: 25		December 06 and 07		
Project Activity 4: Internship Programs	Summer Placements	# of Unpaid Internships: 45 # of Paid Internships: 35 # of Students Placed in Cluster: 15		June 07 and 08		
Project Activity 5: Technology Commercialization	Pilot Project	# of New Jobs Created: 35 # of Job Expansions: 75 # of Advanced Certifications Needed: 37 # of Technology Patents Licensed: 9 # of New Venture Start-Ups: 4 Amount of Capital Invested: $3.5 million		Ongoing (2 to 5 yrs)		

Budget Detail

Region # 9
Solution #: Embedded Systems Cluster Solution
Solution Description: To increase the number of certified employees to meet the demands of the

Each solution within the proposal must follow this budget format for consideration
Pls Identify sub-category line items as well

	Year 1		Year2	
	SSI Funded	Match	SSI Funded	Match
Program Salary & Benefits				
Subtotal -Program Salary and Benefits	**0**	**0**	**0**	**0**
Contracted Services				
Certification Programs	116,500	12,500	79,250	104,250
Subtotal - Contracted Services	116500	12500	79250	104250
Travel				
Subtotal - Travel	0	0	0	0
Materials & Supplies				
Subtotal - Materials and Supplies	0	0	0	0
Overhead				

Subtotal - Overhead	0	0	0	0
Other Expenses				
Marketing	2,500	2,500		
Internship Programs	6,000	2,000		
Technology Commercialization Project	5,000	5,000		
Subtotal - Other Expenses	13500	9500	0	0
Administrative Costs	Functions that include accounting, budgeting, financial & cash management functions; procurement & purchasing functions; property management functions; personnel management functions; payroll functions; monitoring; audit functions; coordinating the resolution of findings arising from audits & monitoring reports; etc.			
Administrative Expenses	15,600		9,510	2,500
Subtotal - Administrative Costs	15600	0	9510	2500
Total	145600	22000	88760	106750
2 year total funding requested	**234360**			
2 year total match	**128750**			

See attached sheets for further detail

Strategic Skills Initiative
Embedded Systems Cluster Solution
Budget Line Item Detail

Certification		Enrollments	SSI Funded	Match	Totals
National Instruments LabVIEW Training					
Average Price	$ 1,100.00				
Enrollments Year One		30	$ 33,000.00	$ -	$ 33,000.00
Enrollments Year Two		40	$ 22,000.00	$ 22,000.00	$ 44,000.00
The MathWorks Matlab Training					
Average Price	$ 1,100.00				
Enrollments Year One		25	$ 27,500.00	$ -	$ 27,500.00
Enrollments Year Two		35	$ 19,250.00	$ 19,250.00	$ 38,500.00
Average Price	$ 600.00				
Enrollments Year One		10	$ 6,000.00	$ -	$ 6,000.00
Enrollments Year Two		10	$ 3,000.00	$ 3,000.00	$ 6,000.00
Advanced Certification Totals		150	$ 110,750.00	$ 44,250.00	$ 155,000.00
Oracle and Microsoft Certifications (MCSE)					
Average Price	$ 1,500.00				
Enrollments Year One		25	$ 37,500.00	$ -	$ 37,500.00
Enrollments Year Two		30	$ 22,500.00	$ 22,500.00	$ 45,000.00
Cisco Certification					
Average Price	$ 2,500.00				
Enrollments Year One		10	$ 12,500.00	$ 12,500.00	$ 25,000.00
Enrollments Year Two		20	$ 12,500.00	$ 37,500.00	$ 50,000.00
Other Certification Totals		85	$ 85,000.00	$ 72,500.00	$ 157,500.00
Total Certification Training		235	$ 195,750.00	$ 116,750.00	$ 312,500.00

Strategic Skills Initiative
Embedded Systems Cluster Solution
Budget Line Item Detail

Project Activity	Budget Category	SSI Funded	Match	Totals	Notes
Attraction and Awareness					
Year One	Contracted Services	$ 2,500.00	$ -	$ 2,500.00	Project Management with Columbus Education Coalition
Year Two	Contracted Services	$ -	$ 2,500.00	$ 2,500.00	Project Management with Columbus Education Coalition
Internships Programs					
Year One	Contracted Services	$ 4,000.00	$ -	$ 4,000.00	Project Management with Columbus Education Coalition
Year Two	Contracted Services	$ 2,000.00	$ 2,000.00	$ 4,000.00	Project Management with Columbus Education Coalition
Technology Commercialization Project					
Year One	Salaries & Benefits	$ 2,500.00	$ 2,500.00	$ 5,000.00	5% Salary Allocation of CEDC Asst. Dir.
Year Two	Salaries & Benefits	$ 2,500.00	$ 2,500.00	$ 5,000.00	5% Salary Allocation of CEDC Asst. Dir.
Administration					
Year One	Administration Costs	$ 15,600.00	$ -	$ 15,600.00	monitoring and audit allocations
Year Two	Administration Costs	$ 9,510.00	$ 2,500.00	$ 12,010.00	monitoring and audit allocations
Total Project Activity		$ 38,610.00	$ 12,000.00	$ 50,610.00	

APPENDIX A:
Comprehensive Listing of National Instruments and MathWorks Advanced Certifications

NI Training Courses and Certification Exams

When registering for a course, please indicate the location by replacing the -xx in the course number with: 01 (Corporate), 11 (Regional), 21 (Onsite).

LabVIEW Courses

Course Name	Course Length	Part Number
LabVIEW Basics I: Introduction	3 days	910013-xx
LabVIEW Basics I: Introduction with CAN Bus Option	3 days	910724-xx
LabVIEW Basics II: Development	2 days	910017-xx
LabVIEW Intermediate I: Successful Development Practices	3 days	910718-xx
LabVIEW Intermediate II: Performance and Connectivity	2 days	910721-xx
LabVIEW Advanced: Application Development	3 days	910607-xx
Data Acquisition and Signal Conditioning	3 days	910010-xx
LabVIEW Modular Instruments	2 days	910739-xx
LabVIEW Instrument Control	2 days	910557-xx
LabVIEW Datalogging and Supervisory Control	2 days	910519-xx
LabVIEW Machine Vision and Image Processing	2 days	910540-xx
LabVIEW Real Time Application Development	3 days	910733-xx
Motion Control Fundamentals	2 days	910643-xx
LabVIEW FPGA	1 day	910661-xx

On-line Courses

Course Name	Course Length	Part Number
LabVIEW Express Fundamentals	2 days (4 two-hour sessions)	910741-69
LabVIEW Machine Vision and Image Processing	2 days (4 two-hour sessions)	910734-69
LabVIEW Real-Time Application Development	2 days (4 two-hour sessions)	910743-69
Certified LabVIEW Developer Preparation	1 day (2 two-hour sessions)	910649-69

TestStand Courses

Course Name	Course Length	Part Number
TestStand I: Introduction	3 days	910667-xx
TestStand II: Customization	2 days	910668-xx

LabWindows/CVI Courses

Course Name	Course Length	Part Number
LabWindows/CVI Basics I: Introduction	3 days	910019-xx
LabWindows/CVI Basics II: Development	2 days	910512-xx
IVI Instrument Driver Development	3 days	910556-xx

DIAdem Courses

Course Name	Course Length	Part Number
DIAdem Basics	3 days	910616-xx
DIAdem Advanced: Application Development	2 days	910618-xx

MATRIXx Courses

Course Name	Course Length	Part Number
MATRIXx Basics	3 days	910657-xx
MATRIXx Advanced	2 days	910658-xx

Multisim Courses

Course Name	Course Length	Part Number
Multisim Basics	2 days	910756-xx

Lookout Courses

Course Name	Course Length	Part Number
Lookout Basics	3 days	910510-xx

NI Certification Exams

Course Name	Course Length	Part Number
NI Certified LabVIEW Associate Developer Exam	1 hour	www.pearsonvue.com/ni
NI Certified LabVIEW Developer Exam	4 hours	910634-01
NI Certified LabVIEW Architect Exam	4 hours	910645-01
NI Certifed LabWindows/CVI Developer Exam	4 hours	910731-01
NI Certified TestStand Developer Exam	4 hours	910635-01
NI Certified TestStand Architect Exam	4 hours	910636-01
Certified Professional Instructor Exam	1 Day	910626-01

Onsite Courses

Lower training cost per employee

Instructors are NI engineers or certified instructors

Training courses to meet your specific requirements at your facility

Create customized courses by combining topics from multiple courses

Hassle-free experience for participants and no travel expenses

If your organization has employees with similar training needs, NI can work with you to plan and execute a training course at your facility to meet your specific and unique requirements. We can discuss and customize any course topic to meet your specific needs. Whether you require a single course for a small group or extensive training for your entire engineering staff, Onsite Courses offer you significant savings, ideal location, tailored and customized course content, and exceptional convenience with National Instruments quality instruction. For more information, download our onsite course offerings below.

Onsite Course Logistics

Contact NI for a FREE quote

Download 2006 Training calendar

Download our onsite course offerings

Courses in Indiana

Enroll in courses by indicating the number of seats you would like to purchase.

Date	Day(s)	Course	Location	Seats Available	Seats Requested	Price	Discounted Price
17-JUL-06	3	LabVIEW Basics I	Carmel, IN	7		$ 1,595.00	$ 1,595.00
20-JUL-06	2	LabVIEW Basics II	Carmel, IN	8		$ 1,095.00	$ 821.25
18-SEP-06	3	LabVIEW Basics I	Carmel, IN	12		$ 1,595.00	$ 1,595.00
21-SEP-06	2	LabVIEW Basics II	Carmel, IN	12		$ 1,095.00	$ 821.25
27-NOV-06	3	LabVIEW Intermediate I	Carmel, IN	12		$ 1,595.00	$ 1,595.00
30-NOV-06	2	LabVIEW Intermediate II	Carmel, IN	12		$ 1,095.00	$ 821.25

The MathWorks Training - Courses

- **View all**
- Technical Computing
- Control Design
- Signal Processing and Communications
- Image Processing
- Test & Measurement
- Financial Modeling and Analysis

Technical Computing

Fundamental Courses	**Length**
MATLAB Fundamentals and Programming Techniques (ML01) **OR** MATLAB for Automotive Applications (ML01-A)	2 days
Advanced MATLAB Programming Techniques (ML02)	1 day
MATLAB for Building Graphical User Interfaces (ML04)	1 day
Specialized Courses	**Length**
Integrating MATLAB with External Applications (ML05)	1 day
Statistical Methods in MATLAB (ST01)	1 day
MATLAB Based Optimization Techniques (OP01)	1 day
Numerical Methods in MATLAB Taught by Cleve Moler (NM01)	2 days
Deploying MATLAB Based Applications (ML06)	1 day

Control Design

Fundamental Courses	**Length**
MATLAB Fundamentals and Programming Techniques (ML01) **OR** MATLAB for Automotive Applications (ML01-A)	2 days
Simulink for System and Algorithm Modeling (SL01) **OR** Simulink for Automotive System Design (SL01-A)	2 days
MATLAB and Simulink for Control Design Acceleration (CT01)	2 days
Stateflow for Logic-Driven System Modeling (SF01) **OR** Stateflow for Automotive Logic Modeling (SF01-A)	1 day
Specialized Courses	**Length**
Advanced Simulink Modeling Techniques (SL02)	1 day
Simulink S-Functions for System Algorithm Modeling (SL03)	1 day
Advanced Stateflow Modeling Techniques (SF02)	1 day
Real-Time Workshop Fundamentals (RT01)	1 day
Real-Time Workshop Embedded Coder for Embedded Software Development (RT02)	2 days

Signal Processing and Communications

Fundamental Courses	Length
MATLAB Fundamentals and Programming Techniques (ML01)	2 days
Simulink for System and Algorithm Modeling (SL01)	2 days
Simulink for Communication Systems (CM01)	1 day
MATLAB for Signal Processing (SG01)	2 days
Simulink for Signal Processing (SG02)	1 day
Specialized Courses	**Length**
Stateflow for Logic-Driven System Modeling (SF01)	1 day
Real-Time Workshop Fundamentals (RT01)	1 day

Image Processing

Course Name	Length
MATLAB Fundamentals and Programming Techniques (ML01)	2 days
MATLAB for Image Processing (IP01)	2 days
Statistical Methods in MATLAB (ST01)	1 day
MATLAB Based Optimization Techniques (OP01)	1 day
Advanced MATLAB Programming Techniques (ML02)	1 day
MATLAB for Building Graphical User Interfaces (ML04)	1 day
MATLAB for Signal Processing (SG01)	2 days

Test & Measurement

Course Name	Length
MATLAB Fundamentals and Programming Techniques (ML01)	2 days
MATLAB for Data Acquisition and Instrument Control (TM01)	1 day
Advanced MATLAB Programming Techniques (ML02)	1 day
MATLAB for Building Graphical User Interfaces (ML04)	1 day
Deploying MATLAB Based Applications (ML06)	1 day

Financial Modeling and Analysis

Course Name	Length
MATLAB for Financial Applications (ML01-F)	2 days
MATLAB Based Optimization Techniques (OP01)	1 day

Statistical Methods in MATLAB (ST01)	1 day
Deploying MATLAB Based Applications (ML06)	1 day
Advanced MATLAB Programming Techniques (ML02)	1 day
MATLAB for Building Graphical User Interfaces (ML04)	1 day

Date(s)	Course	Price	Location	Register
Week of Jun 12, 2006 - Jun 16, 2006				
Jun 14, 2006 - Jun 15, 2006	MATLAB for Image Processing	$1,200.00	Houston, TX	register
Jun 14, 2006	Real-Time Workshop Fundamentals	$550.00	Detroit (Novi), MI	register
Jun 15, 2006 - Jun 16, 2006	Real-Time Workshop Embedded Coder	$1,200.00	Detroit (Novi), MI	register
Jun 16, 2006	Integrating MATLAB with External Applications	$550.00	Houston, TX	register
Jun 16, 2006	MATLAB for Building Graphical User Interfaces	$600.00	Albuquerque, NM	register
Week of Jun 19, 2006 - Jun 23, 2006				
Jun 19, 2006 - Jun 20, 2006	MATLAB for Financial Applications	$1,100.00	San Francisco, CA	register
Jun 19, 2006 - Jun 20, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Washington, DC	register
Jun 19, 2006 - Jun 20, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Virginia Beach, VA	register
Jun 19, 2006 - Jun 20, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Houston, TX	register
Jun 19, 2006 - Jun 20, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Boston (Natick), MA	register
Jun 21, 2006 - Jun 22, 2006	MATLAB for Signal Processing	$1,100.00	Boston (Natick), MA	register
Jun 21, 2006 - Jun 22, 2006	Simulink for System & Algorithm Modeling	$1,100.00	Washington, DC	register
Jun 21, 2006	Statistical Methods in	$600.00	San Francisco, CA	register

	MATLAB			
Jun 23, 2006	Advanced Simulink	$600.00	Washington, DC	register
Week of Jun 26, 2006 - Jun 30, 2006				
Jun 26, 2006 - Jun 27, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Seattle (Kirkland), WA	register
Jun 26, 2006 - Jun 29, 2006	Modeling Dynamic Systems with Simulink	$1,100.00	Instructor-led online	register
Jun 28, 2006 - Jun 29, 2006	Simulink for System & Algorithm Modeling	$1,100.00	Seattle (Kirkland), WA	register
Jun 30, 2006	Real-Time Workshop Fundamentals	$550.00	Seattle (Kirkland), WA	register
Week of Jul 10, 2006 - Jul 14, 2006				
Jul 10, 2006 - Jul 11, 2006	MATLAB for Financial Applications	$1,100.00	New York, NY	register
Jul 10, 2006 - Jul 11, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	King George, VA	register
Jul 10, 2006	Simulink S-Functions	$600.00	Scottsdale, AZ	register
Jul 11, 2006 - Jul 12, 2006	MATLAB and Simulink for Control Design Acceleration	$1,200.00	Scottsdale, AZ	register
Jul 11, 2006 - Jul 12, 2006	Building Graphical User Interfaces	$600.00	Instructor-led online	register
Jul 12, 2006	Advanced MATLAB Programming Techniques	$600.00	King George, VA	register
Jul 12, 2006	MATLAB for Building Graphical User Interfaces	$600.00	New York, NY	register
Jul 13, 2006	Integrating MATLAB with External Applications	$550.00	New York, NY	register
Jul 13, 2006	MATLAB for Building Graphical User Interfaces	$600.00	King George, VA	register
Jul 13, 2006 - Jul 14, 2006	Real-Time Workshop Embedded Coder	$1,200.00	Scottsdale, AZ	register
Jul 14, 2006	Deploying MATLAB Based Applications	$550.00	New York, NY	register
Week of Jul 17, 2006 - Jul 21, 2006				

Jul 17, 2006 - Jul 18, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Boston (Natick), MA	register
Jul 17, 2006 - Jul 18, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Minneapolis (St. Louis Park), MN	register
Jul 17, 2006 - Jul 18, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Detroit (Novi), MI	register
Jul 17, 2006 - Jul 18, 2006	Simulink for System & Algorithm Modeling	$1,100.00	El Segundo, CA	register
Jul 17, 2006 - Jul 18, 2006	Simulink for System & Algorithm Modeling	$1,100.00	Columbia, MD	register
Jul 19, 2006 - Jul 20, 2006	Advanced Simulink	$600.00	Detroit (Novi), MI	register
Jul 19, 2006 - Jul 20, 2006	MATLAB and Simulink for Control Design Acceleration	$1,200.00	El Segundo, CA	register
Jul 19, 2006 - Jul 20, 2006	MATLAB and Simulink for Control Design Acceleration	$1,200.00	Columbia, MD	register
Jul 19, 2006 - Jul 20, 2006	Simulink for System & Algorithm Modeling	$1,100.00	Minneapolis (St. Louis Park), MN	register
Jul 19, 2006	Simulink S-Functions	$600.00	Boston (Natick), MA	register
Jul 20, 2006 - Jul 21, 2006	Stateflow for System Modeling	$550.00	Boston (Natick), MA	register
Jul 21, 2006	Real-Time Workshop Fundamentals	$550.00	El Segundo, CA	register
Jul 21, 2006	Real-Time Workshop Fundamentals	$550.00	Columbia, MD	register
Jul 21, 2006	Real-Time Workshop Fundamentals	$550.00	Minneapolis (St. Louis Park), MN	register
Jul 21, 2006	Simulink S-Functions	$600.00	Detroit (Novi), MI	register
Week of Jul 24, 2006 - Jul 28, 2006				
Jul 24, 2006 - Jul 27, 2006	MATLAB for Image Processing	$1,200.00	Instructor-led online	register
Jul 24, 2006 - Jul 25, 2006	MATLAB Fundamentals and Programming Techniques	$1,100.00	Parsippany, NJ	register
Jul 24, 2006 - Jul 25, 2006	Simulink for System & Algorithm Modeling	$1,100.00	Denver, CO	register

Jul 26, 2006	Real-Time Workshop Fundamentals	$550.00	Denver, CO	register
Jul 26, 2006 - Jul 27, 2006	Simulink for System & Algorithm Modeling	$1,100.00	Parsippany, NJ	register
Jul 27, 2006 - Jul 28, 2006	Real-Time Workshop Embedded Coder	$1,200.00	Denver, CO	register
Jul 28, 2006	Advanced MATLAB Programming Techniques	$600.00	Parsippany, NJ	register

APPENDIX B:
Letters of Support for the Nursing Initiative

COLUMBUS REGIONAL HOSPITAL

May 4, 2006

Commissioner Ronald L. Stiver
Indiana Department of Workforce Development
10 North Senate Avenue
Indianapolis, IN 46204

Dear Commissioner Stiver:

I am writing to offer my enthusiastic support for the Strategic Skills Initiative Grant proposal for nursing that is being submitted by the Region 9 Regional Advisory Board. This board represents ten counties in Southeast Indiana and assists communities in addressing workforce needs.

The proposed grant will train faculty members to attain a Master's Degree in Nursing. As you know there is nursing shortage in Indiana and across the country. The attainment of an MSN by faculty members will ensure that we can continue to graduate students in ASN and BSN Nursing programs to meet the needs of an aging population in our area.

The proposed plan is to provide forgivable loans to qualified students at Ivy Tech-Madison, Ivy-Tech-Lawrenceburg, Ivy Tech-Columbus and IUPUC in Columbus. In return we will be requesting that the graduates commit to at least a three year faculty assignment at their respective post-secondary institutions. With this commitment we will be able to graduate an additional 40 ASN and BSN students above our present levels. Our grant proposal is consistent with a strategy that we developed in 2002 and has resulted in reducing the nursing shortage in our area.

I respectfully request your careful review of their grant application and approval if the grant meets the established guidelines.

Please let me know if I can be of further assistance to you. If you have questions, please contact me at 812-376-5626.

Thank you for your time and attention to this matter. I look forward to hearing from you.

Sincerely,

Cherona J. Hajewski
Sr. Vice President
Patient Care Services

2400 EAST 17TH STREET
COLUMBUS, INDIANA 47201

TOTAL P.01

SCHNECK MEDICAL CENTER

Better healthcare begins here.

May 2, 2006

Mr. Ron Stiver, Commissioner
of Indiana Department
Of Work Force Development

Dear Mr Stiver:

In 2002 regional hospitals and educational leaders met with the Commission of Higher Education to discuss the nursing shortage and potential solutions. In 2003 Ivy Tech initiated a survey with local hospitals, long term care facilities, and doctor's offices to provide information on the shortage of both Licensed Practical Nurses and Registered Nurses. The results revealed that our annual supply was significantly lower than the demand requirements.

We were also concerned about the area's nursing career path. We evaluated the number of Bachelor Degree Nursing graduates. In doing this we saw that we had a shortage in this area as well. We realized that the key to the long term solutions of the nursing shortage overall involved developing a high number of Master Degree Nursing graduates for faculty requirements and for leadership positions within area hospitals.

Since there is a shortage of nurses our hospital has been supportive and instrumental in providing financial support through cash donations, purchasing of medical equipment and supplies for training. We are utilizing current expert staff to supplement the educational need for instructors. Schneck has been and will continue to be committed to ensuring there is adequately trained staff to give quality care to the patients in our community.

Sincerely,

Tammy Dye

Tammy Dye,
Vice President Clinical Services

TD/blm

411 West Tipton Street • P.O. Box 2349 • Seymour, Indiana 47274 • 812-522-2349 • www.schneckmed.org

St.Vincent
Jennings Hospital

301 Henry Street
North Vernon, IN 47265
(812) 352-4200
Fax: (812) 352-4201

www.stvincent.org

June 15, 2006

Commissioner Ronald L. Stiver
Indiana Department of Workforce Development
10 North Senate Avenue
Indianapolis, IN 46204

Dear Commissioner Stiver:

I am writing to offer my support for the Strategic Skills Initiative Grant proposal for nursing that is being submitted by the Region 9 Regional Advisory Board. This board represents ten counties in Southeast Indiana and assists communities in addressing workforce needs.

The proposed grant will train faculty members to attain a Master's Degree in Nursing. As you know there is nursing shortage in Indiana and across the country. The attainment of an MSN by faculty members will ensure that we can continue to graduate students in ASN and BSN Nursing programs to meet the needs of an aging population in our area.

The proposed plan is to provide forgivable loans to qualified students at Ivy Tech-Madison, Ivy-Tech-Lawrenceburg, Ivy Tech-Columbus and IUPUC in Columbus. In return we will be requesting that the graduates commit to at least a three year faculty assignment at their respective post-secondary institutions. With this commitment we will be able to graduate an additional 40 ASN and BSN students above our present levels. Our grant proposal is consistent with a strategy that we developed in 2002 and has resulted in reducing the nursing shortage in our area.

I respectfully request your careful review of their grant application and approval if the grant meets the established guidelines.

St.Vincent
Jennings Hospital

Please let me know if I can help you further. In the meantime, if you have questions, please contact me at 812-352-4307.

Thank you for your time and attention to this matter. I look forward to hearing from you.

301 Henry Street
North Vernon, IN 47265
(812) 352-4200
Fax: (812) 352-4201

www.stvincent.org

Sincerely,

Kathryn Johnson

Kathryn Johnson
Director of Human Resources
St. Vincent Jennings Hospital

As a member of
ASCENSION HEALTH

Core Values

We are called to:

Service of the poor
Generosity of spirit for persons most in need.

Reverence
Respect and compassion for the dignity and diversity of life.

Integrity
Inspiring trust through personal leadership

Wisdom
Integrating excellence and stewardship

Creativity
Courageous innovation

Dedication
Affirming the hope and joy of our ministry

community mental health center, inc.
285 Bielby Road Lawrenceburg, IN 47025 Phone 812-537-1302

June 6, 2006

Commissioner Ronald L. Stiver
Indiana Department of Workforce Development
10 North Senate Avenue
Indianapolis, IN 46204

Dear Commissioner Stiver:

I am writing to offer my enthusiastic support for the Strategic Skills Initiative Grant proposal for nursing that is being submitted by the Region 9 Regional Advisory Board. This board represents ten counties in Southeast Indiana and assists communities in addressing workforce needs.

The proposed grant will train faculty members to attain a Master's Degree in Nursing. As you know there is nursing shortage in Indiana and across the country. The attainment of an MSN by faculty members will ensure that we can continue to graduate students in ASN and BSN Nursing programs to meet the needs of an aging population in our area.

The proposed plan is to provide forgivable loans to qualified students at Ivy Tech-Madison, Ivy-Tech-Lawrenceburg, Ivy Tech-Columbus and IUPUC in Columbus. In return we will be requesting that the graduates commit to at least a three year faculty assignment at their respective post-secondary institutions. With this commitment we will be able to graduate an additional 40 ASN and BSN students above our present levels. Our grant proposal is consistent with a strategy that we developed in 2002 and has resulted in reducing the nursing shortage in our area.

I respectfully request your careful review of their grant application and approval if the grant meets the established guidelines.

Please let me know if I can help you further. In the meantime, if you have questions, please contact me at 812-532-3423.

Thank you for your time and attention to this matter.

Sincerely,

Charlotte R. Ipach, RN, MSN
Director of Inpatient Services

Dearborn Co. Office
427 Eads Parkway
Lawrenceburg, IN 47025
Phone 812-537-7375

Franklin Co. Office
Hwy. 101 & Cooley Rd.
P.O. Box 225
Brookville, IN 47012
Phone 765-647-4173

Ohio Co. Office
315 Industrial Access Rd.
P.O. Box 167
Rising Sun, IN 47040
Phone 812-438-2711

Ripley Co. Offices
215 E. George St.
Batesville, IN 47006
Phone 812-934-3245

Inter-Community Medical Center
240 W. Craven St.
Osgood, IN 47037
Phone 812-689-4281

Switzerland Co. Office
205 W. Main St.
P.O. Box 144
Vevay, IN 47043
Phone 812-427-2737

INDIANA UNIVERSITY
PURDUE UNIVERSITY
COLUMBUS

June 12, 2006

Commissioner Ronald L. Stiver
Indiana Department of Workforce Development
10 North Senate Avenue
Indianapolis, IN 46204

DIVISION OF
NURSING

Dear Commissioner Stiver:

I am writing to offer my support for the Strategic Skills Initiative Grant proposal for nursing that is being submitted by the Region 9 Regional Advisory Board. This board represents ten counties in Southeast Indiana and assists communities in addressing workforce needs.

The proposed grant would train faculty members to attain a Master's Degree in Nursing. As you know there is nursing shortage in Indiana and across the country. The attainment of an MSN by faculty members would ensure that Southeast Indiana can continue to graduate students in ASN Nursing programs to meet the needs of an aging population in our state.

The proposed plan is to provide forgivable loans to qualified faculty / students at Ivy Tech-Madison, Ivy-Tech-Lawrenceburg, Ivy Tech-Columbus and IU School of Nursing in Columbus (IUPUC) in order to further their education. In return we would be requesting that the graduates commit to at least a three year faculty assignment at their respective post-secondary institutions. With this commitment, we will be able to graduate additional ASN students above our present levels. In addition to the MSN need for our area, there is also a need to prepare several faculty members (with a current MSN) with the PhD in Nursing for baccalaureate nursing education. The PhD faculty would further support nursing education with current baccalaureate nursing programs, such as the RN to BSN at IUPUC, in this region of the state. The BSN is considered by some in the nursing profession as the 'entry in to practice' and is certainly the standard for magnet status in hospitals across the United States.

I respectfully request your careful review of the grant application and approval if the grant meets the established guidelines. Please let me know if I can be of any assistance with the proposal. If you have questions, please contact me at my office phone at 812-348-7377 or office email at delharmo@iupuc.edu . Thank you for your time and attention to this matter.

Sincerely,

Debra Harmon

Debra Harmon, RN, MSN, CCRN
Head, Division of Nursing
IU School of Nursing at IUPUC (Columbus)

4601 Central Avenue
Columbus, Indiana
47203-1769

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